

## Fostering Research in the Indian Universities

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**For excellence in the academia:** During informal discussion in one of the PAC meeting, Professor Krishnan of TIFR, Mumbai, informed that for publishing one paper in the PUBMED indexed journal, the Govt of India spends about Rs. One Crore. He also informed that the figure is much low in the case of papers being published from China and other developing countries.

The amount of Rs. One Crore per paper is staggering and cannot be justified. We need to introspect. *Prima facie* the reasons appear to center around huge wasteful expenditure, no accountability and poor quality of work that is much removed from the international trends and priorities. How to regulate these expenses and yet retain the freedom that Indian scientists have always enjoyed, is the issue. How to improve the quality of work and yet nurture the spark that individual scientists have shown from time to time. How do we ensure that we get maximum out of our investment in Science?

One way to achieve this would be to identify good workers - in the Universities or in the Govt. sponsored institutions - on the basis of their proven track record and publications in indexed journals. Agencies like DST may take proactive steps in identifying such workers and adhere to strict eligibility conditions while making these selections. Having identified such individual scientists, DST may invite research proposals from them, screen them and sanction the project strictly on merit. The projects need not be over ambitions in terms of funds or the scope of proposed work. The sanctioning process should be simple and free from bureaucratic delays. However, these projects should have strict accountability standards. The output should be measured in terms of publications in PUBMED indexed journals. The projects should be terminated abruptly, if the output does not match the expectations. Those scientists who have proved resourceful and productive should be invited to submit bigger projects. Mechanisms should be instituted that will identify good workers and reward them for their contributions, originality and dedication to science. This strategy will not only foster quality science but also enable to counter the feeling of frustration that often weighs on good workers who are deprived of opportunities.

The research in the Indian Universities is plagued by yet another serious shortcoming. There is a strong tendency among the researchers to work in isolation, regardless of the trends elsewhere. Every researcher is a part of a much larger canvass and must identify his position in the broad scenario in space and time. He must correlate with others to be more relevant to the rest of the scientific community. In this background, the area that he chooses, be it pure or applied, must strike a cord in terms of objectives, techniques employed and the final outcome, with other laboratories. The policy makers must send a message, *loud and clear*, that only such projects that are more responsive to the rest of the world will be favored for funding.

**To promote the Academia-Industry interaction:** Yet another area urgently in need of reforms is the cooperation between the research conducted in the Universities and the R & D issues that confront the Industry. With the exception few IITs and similar national level institutions, the scenario is dismal. There is very little meaningful interaction between the Universities and the Industry. Our students do excel when they work in the Industry, be it R & D or production unit. But these very students are not able to perform in the University set-up. Obviously cultural gap may be blamed for this, that needs to be bridged. Aside from this, there is a deep-rooted suspicion that the Industry nurses about the research being conducted in the Universities. It is the responsibility of the Universities to be more proactive. They must establish contacts with the Industry, identify the lacunae in technology, undertake active research in these areas and provide effective solutions. There must be mutual trust and an urge to grow together. This will not only generate funds for the Universities but also make them more responsive to the society at large.